

21 quick-drying property imparting agent has a solubility in water lower than a solubility in said water-soluble solvent.

REMARKS

Claims 1-20 remain pending after amendment.

Claim Amendments

By this amendment, various editorial revisions are made in claim 1. No new matter is added by this amendment.

Rejection under 35 USC 112 (paragraph two)

Claim 12 stands rejected under 35 USC 112 (paragraph two) as not distinctly claiming the invention. This rejection respectfully is traversed to the extent deemed to apply to the claims as amended.

In response, applicants amend claim 1 in a manner which is believed to clarify the relationship that exists between the limitations of claims 1 and 12. In view of such amendments, it is believed that the rejection is without basis and should be withdrawn.

Applicants' Claimed Invention

Applicants' claimed invention is directed to an aqueous ink composition comprising water, a water-soluble solvent, a water-soluble resin, a dye, and a quick-drying property imparting agent, wherein the dye, if soluble in said water-soluble solvent, has a solubility in water lower than a solubility in the water-soluble solvent, said solubility of the dye in water being 10 wt% or lower, and the quick-drying property imparting agent has a solubility in water lower than a solubility in said water-soluble solvent. Applicants' invention is neither disclosed nor suggested by the prior art.

Rejection of Claims 1-3, 5-12, 16 and 19-20 under 35 USC 102(e)

Claims 1-3, 5-12, 16 and 19-20 stand rejected under 35 USC 102(e) as being anticipated by Ohta et al U.S. Patent No. 6,211,265. This rejection respectfully is traversed.

Ohta is directed to a water-based ink composition comprised of water, water-soluble polymers, water-soluble organic solvents, and dyes. The patent is silent with respect to the solubility characteristics of the dyes. The Examiner takes the view that the disclosed dyes inherently satisfy the claimed limitations.

In response, applicants note the Examiner's admission that the cited reference is silent with respect to various of the desired properties of the azole compound, but that "it is clear that the azole compound will inherently function as quick-drying property imparting agent as well as inherently possess solubility and melting temperature as presently claimed."

However, as Ohta is completely silent with respect to whether the dye has the requisite degree of solubility in water, as well as with respect to the use of fluorescent dyes which have a solubility in water lower than the solubility in a water-soluble solvent as claimed, the claimed invention cannot be deemed to be anticipated by Ohta.

The rejection is thus without basis and should be withdrawn.

Rejection of Claims 17-18 under 35 USC 103(a)

Claims 17-18 stand rejected under 35 USC 103(a) as being unpatentable over Ohta in view of Doi et al U.S. Patent No. 6,378,999 or Yatake et al U.S. Patent No. 6,051,057. This rejection respectfully is traversed.

The Ohta reference is discussed at length above. Ohta discloses at column 2, lines 16-34 that a colorant having a

specific structure is used in combination with a highly reactive water-soluble cationic polymer having a primary amino group to attain good lightfastness and waterfastness. However, as discussed above, the reference does not disclose or suggest that water, a water-soluble solvent, a water-soluble resin, a dye having low solubility in water (10 wt.% or lower), and a quick drying-property imparting agent having solubility in water lower than a solubility in the water-soluble solvent are used to attain an excellent drying property as claimed. Further, the reference neither discloses nor suggests the use of a fluorescent dye.

Neither Doi nor Yatake cure the deficiencies of Ohta.

Doi teaches at column 4, lines 22-23 that the coloring material is not particularly restricted. However, Examples 1-17 employ pigments such as carbon black as the coloring material. Thus, the reference is substantially directed to a pigment ink. The reference merely mentions dyes as the coloring material but does not teach that the dye has a solubility in water lower than a solubility in a water-soluble solvent to attain good drying properties as in applicants' invention. As described at column 2, lines 3-38, the object of the reference is to attain good dispersion stability and printing quality. Thus, the advantage

of the present invention - good drying property - is not obvious from the teachings of the reference.

Yatake discloses at column 2, lines 20-25 an ink comprising a water-soluble colorant, a water-soluble organic solvent, water and a specific compound. As the water-soluble solvent, alcohols are mentioned at column 6, lines 18-21. However, the reference does not teach that the dye has solubility in water lower than a solubility in the water-soluble solvent to attain good drying properties as in the claimed invention.

Given the noted deficiencies of the cited references, the combined teachings of the references fail to result in the claimed invention.

The rejection is thus improper and should be withdrawn.

Rejection of Claims 1-16 and 19-20 under 35 USC 103(a)

Claims 1-16 and 19-20 stand rejected under 35 USC 103(a) as being unpatentable over JP 53140105 in view of Kitamura et al U.S. Patent No. 6,498,222. This rejection respectfully is traversed.

It is initially noted that the JP '105 reference is cited in untranslated form - the Examiner apparently has ordered a translation of the reference in order to confirm its relevance

or lack thereof. The Examiner does admit that the reference is silent with respect to the solubility of the dye in water or solvent as claimed. Nonetheless, the Examiner takes the position that the disclosed dyes satisfy the claimed limitations, and that the only difference between the disclosed composition and the claimed invention is the absence of a quick-drying property imparting agent.

JP '105 teaches at column 2, lines 2-4 as follows: "The present invention relates to an aqueous ink for ink jet printing which is invisible in visible light but emits light and becomes visible when irradiated with UV light."

As noted by the Examiner, the reference does not disclose or suggest the use of a quick-drying property imparting agent having a solubility in water lower than a solubility in the water-soluble solvent used to attain an excellent drying property as in the present invention. The reference does not teach any means for improvement of drying property.

Kitamura does not cure the deficiencies of JP '105. Kitamura teaches at column 2, lines 43-51 that a cationic resin having a specific structure is added to an ink composition to attain good lightfastness and waterfastness. In column 8,

various dyes and pigments are mentioned, and in the examples dyes and pigments are used.

The reference is silent with respect to the use of a dye having a solubility in water lower than the solubility in the water-soluble solvent to attain good drying property. As admitted by the Examiner, the reference is also silent with respect to the presence of a quick-drying property imparting agent, although the Examiner asserts that compounds present in the composition inherently satisfy this limitation.

However, given the distinctions that exist between the respective compositions of JP '105 and Kitamura, the recited combination of these references cannot result in the claimed invention. The references do not provide the requisite motivation to lead one of ordinary skill in the art to the claimed invention.

The rejection is thus without basis and should be withdrawn.

Rejection of Claims 17-18 under 35 USC 103(a)

Claims 17-18 stand rejected under 35 USC 103(a) as being unpatentable over JP '105 in view of Ohta, Doi U.S. Patent No.

6,378,999 or Yatake et al U.S. Patent No. 6,051,057. This rejection respectfully is traversed.

The deficiencies of JP '105 are discussed above. The additionally-cited Ohta, Doi and Yatake references do not cure the deficiencies of JP '105.

As noted previously, Ohta discloses at column 2, lines 16-34 that a colorant having a specific structure is used in combination with a highly reactive water-soluble cationic polymer having a primary amino group to attain good lightfastness and waterfastness. However, as discussed above, the reference does not disclose or suggest that water, a water-soluble solvent, a water-soluble resin, a dye having low solubility in water (10 wt.% or lower), and a quick drying-property imparting agent having solubility in water lower than a solubility in the water-soluble solvent are used to attain an excellent drying property as claimed. Further, the reference neither discloses nor suggests the use of a fluorescent dye.

Doi teaches at column 4, lines 22-23 that the coloring material is not particularly restricted. However, Examples 1-17 employ pigments such as carbon black as the coloring material. Thus, the reference is substantially directed to a pigment ink. The reference merely mentions dyes as the coloring material but

does not teach that the dye has a solubility in water lower than a solubility in a water-soluble solvent to attain good drying properties as in applicants' invention. As described at column 2, lines 3-38, the object of the reference is to attain good dispersion stability and printing quality. Thus, the advantage of the present invention - good drying property - is not obvious from the teachings of the reference.

Yatake teaches at column 2, lines 20-25 an ink comprising a water-soluble colorant, a water-soluble organic solvent, water and a specific compound. As the water-soluble solvent, alcohols are mentioned at column 6, lines 18-21. However, the reference does not teach that the dye has solubility in water lower than a solubility in the water-soluble solvent to attain good drying properties as in the claimed invention.

Given the noted deficiencies of the cited references, the combined teachings of the references do not result in the claimed invention.

The rejection is thus improper and should be withdrawn.

The application is now believed to be in condition for allowance and an early indication of same is earnestly solicited.

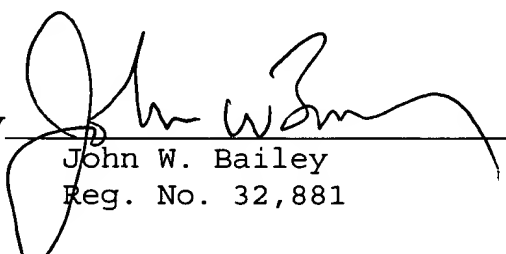
In the event that any outstanding matters remain in this application, Applicants request that the Examiner contact James W. Hellwege (Reg. No. 28,808) at (703) 205-8000 to discuss such matters.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Very truly yours,

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CLAIM AMENDMENTS WITH MARKINGS TO SHOW CHANGES

1. (Amended) An aqueous ink composition [which contains]
comprising water, a water-soluble solvent, a water-soluble
resin, [and] a dye, and [additionally] a quick-drying property
imparting agent, wherein the dye, if soluble in said water-
soluble solvent, has a solubility in [the] water lower than a
solubility in the water-soluble solvent, said solubility of the
dye in water [of the dye is] being 10 wt% or lower, and the
quick-drying property imparting agent has a solubility in [the]
water lower than a solubility in [the] said water-soluble
solvent.